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Microsoft

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VIA ECFS
Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: PS Docket No. 18-261 - In the Matter of Implementing Kari's Law and Section 506 of RAY BAUM's Act;
PS Docket No. 17-239 – In the Matter of Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems

Dear Ms. Dortch:

On July 24, the undersigned and Laura Carter, of Microsoft Corporation, met via telephone conference call with Zenji Nakazawa, Legal Advisor for Chairman Ajit Pai; Umair Javed, Legal Advisor to Commissioner Rosenworcel; Erin McGrath, Legal Advisor to Commissioner O'Reilly; and with the following members of the Public Safety and Homeland Security Bureau (PSHSB) and, where noted, OEA – David Furth, Deputy Chief; Erika Olsen, Senior Legal Counsel (by phone); Michael Wilhelm, Chief, Policy and Licensing Division (PLD); John A. Evanoff, Deputy Chief, PLD; William Beckwith; Elizabeth Cuttner, Attorney-Advisor, PLD; Dr. Rasoul Safavian, Technologist, PLD; Chuck Needy, OEA; Thomas Eng, Electronics Engineer, PLD; Brenda Boykin; and Grace Chuan, Intern for Chief Technology Officer.

On July 25, the undersigned, Laura Carter, Gunnar Halley, Roy Kuntz, and Bernard Aboba – all representing Microsoft – met via telephone conference call with the following members of the PSHSB – David Furth, Deputy Chief; Erika Olsen, Senior Legal Counsel; John A. Evanoff, Deputy Chief, PLD; William Beckwith; Dr. Rasoul Safavian, Technologist, PLD; Thomas Eng, Electronics Engineer, PLD; and Brenda Boykin. The issues the parties discussed on both July 24th and 25th are described below.

The Microsoft representatives discussed the following three issues: (i) the imposition of a feasible location standard for non-fixed iVoIP; (ii) the limitations of collecting and using "registered location" with respect to an already existing subscriber base and 15 years after the requirement was originally imposed;[1] and (iii) the need to clarify that none of the rules will apply to newly-classified iVoIP services until two years after the effective date of the order.

[1] *See IP-Enabled Services; E911 Requirements for IP-Enabled Service Providers;* WC Docket Nos. 04-36 and 05-196; First Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 10245 (2005) (*VoIP E911 Order*).

Alternative Location Information. While encouraged by the draft order's endorsement of the use of commercially available location services for 911 calling, the Microsoft representatives highlighted a remaining challenge with respect to the proposed requirement that non-fixed interconnected VoIP ("iVoIP") provide "alternative location information." The existing draft definition states that "alternative location information" is "location information (which may be coordinate-based), sufficient to identify the civic address and approximate in-building location, including floor level, in large buildings."[2] While we believe that providing a civic address will be technically feasible for non–fixed iVoIP within the two years provided by the Commission's draft order, providing the floor level within a large building remains technically infeasible for services that can be used from any location where the user can access the internet. As has been explained in this proceeding, a 'z' coordinate is not yet readily available for locating callers using apps on internet-connected devices.

The Commission appears to have recognized this technical infeasibility for non-fixed services because it does not impose the "Alternative Location" requirement on non-fixed MLTS services when those services are used outside the customer's premises. In those instances, the draft order requires that the MLTS app be capable of providing "enhanced location," which the draft order defines as "information which may be coordinate-based, consisting of the best available location that can be obtained from any available technology or combination of technologies at reasonable cost."[3] The draft order applies this location requirement based on the Commission's finding that "[w]hen an MLTS end user is off-premises, the MLTS does not typically control or have access to location information. Remote access instead may involve connecting via a third-party access point that is outside the control of the enterprise or the MLTS operator, and for which location information may not be available. We agree with commenters that this lack of access or control makes it considerably more challenging and costly for an MLTS to provide location information for off-premises users than on premises users."[4]

This "lack of access or control" is precisely the same situation in which nomadic iVoIP services operate. A non-fixed MLTS app used off-premises and a non-fixed iVoIP app are identical in the context of the hurdles they face in locating users. Both are capable of connecting to an internet access endpoint that may be in Seattle, Sioux City, or Seoul; both can be used to make phone calls; and neither has access to specific in-building location information from all possible locations from which a 911 call might be made. Therefore, like off-prem non-fixed MLTS 911 calls, a non-fixed iVoIP 911 call faces the same "considerably more challenging and costly" hurdles to providing dispatchable or alternative location information.[5]

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[2] Draft Order, §9.3 of the proposed rules.
[3] Draft Order, §9.16(a)(2) of the proposed rules, referencing the provision of "enhanced location" in subsection (b)(3)(iii).
[4] Draft Order at ¶ 159.
[5] *See id*.

In our discussions, FCC staff noted that non-fixed iVoIP services, unlike MLTS, will have a "registered location" for each user. Thus, from the FCC's perspective non-fixed iVoIP services are different than MLTS. However, the Microsoft representatives explained that (i) not every iVoIP service will necessarily have a registered address – most notably those that are newly subject to the 911 rules; and (ii) it is no longer in the public interest to require all iVoIP providers to collect and rely on a registered address. While this may be an appropriate option for some iVoIP providers, and moreover may have been an appropriate option in the context of the Vonage "box" that generally did not move from place to place when the FCC first imposed the registered location obligation on Vonage and other iVoIP providers,[6] it should not be mandated for all iVoIP services that are in today's marketplace.

Registered Location. Although the concept of "registered location" has long been the basis for location of iVoIP 911 callers, its collection and use should remain an option for, but no longer be required of, all iVoIP providers for the following reasons. First, with respect to services that have long been in the market (and thus have many existing users) but not previously subject to the 911 obligations, obtaining a registered location from each user would be significantly disruptive and, for some companies, not possible. Today, for example, Skype does not collect such information from its users. As Microsoft explained in its meetings with the Bureau, we do not believe it is the Commission's intention to fundamentally disrupt – and potentially damage significantly - the Skype business for the sake of obtaining a registered location that, as we describe below, is of very little value in the context of a 911 call in 2019.

Not only is the collection of registered location information challenging for a mature service – long in the marketplace with lots of existing users – but also the effort to collect those addresses would not be worthwhile. As Microsoft explained in its comments,[7] our services – both our enterprise and consumer VoIP offerings – are inherently nomadic. They move every time a user, with the app downloaded on any device – goes to any new location with her device-in-hand. Therefore, the registered location at initiation is, arguably, irrelevant because the user could be anywhere – work, home, neighbor's house, across the country or across the globe – when they make a call. To assume they are at their registered location (which was a fairly safe assumption in the context of the Vonage "box" that was not designed to move every time the user went somewhere) is a risky assumption, and it should rarely form the basis of 911 location information provided to a PSAP. Moreover, to expect a user to update their location each and every time she moves is simply unrealistic.

Finally, there is an additional risk that must be considered in the context of allowing users to manually update their location information – swatting. Applications like Skype -- so-called "over the top" applications -- can be downloaded with ease by nearly anyone at anytime from anywhere. As a result, a nefarious actor could easily download the application, input a

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[6] *See VoIP E911 Order supra* n.1.

[7] *See Implementing Kari's Law and Section 506 of RAY BAUM's ACT; Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems,* PS Docket Nos. 18-261 and 17-239, Comments of Microsoft Corporation at p 4 (filed Dec. 10, 2018).

false location, and then make a 911 call for the purpose of dispatching public safety resources to a particular location under false pretenses. While the address may be an actual address, there is no way to prevent a bad actor from fraudulently providing an address in the "registered location" field of an app. Thus, if obtaining a registered location is mandatory for all covered iVoIP providers, the FCC will increase the opportunities for bad actors to abuse the system.

A proposed alternative to the requirement to collect and transmit Registered Location and the definition of "Alternative Location Information"

In light of the foregoing issues with the existing definition of Alternative Location Information and with the requirement to collect and transmit registered location, Microsoft suggested that the Commission modify its draft rules to (1) eliminate Registered Location requirements for that category of interconnected VoIP providers newly subject to the Commission's 911 rules; and (2) modify the definition of Alternative Location Information in such a way as to build in flexibility to afford interconnected VoIP providers with the option of incorporating and using one or more of several potential location solutions, from registered location, to real-time dynamic location capabilities, to the use of a live, private Emergency Calling Relay Center operator. This would allow providers to use the technology and approach for a given situation that will be the most effective in accurately dispatching and protecting the safety of the user.

Registered Location Requirements

The draft order proposes to redefine iVoIP as follows:

> "Interconnected VoIP service. An interconnected Voice over Internet Protocol (VoIP) service is a service that:
>
> (1) Enables real-time, two-way voice communications;
>
> (2) Requires a broadband connection from the user's location;
>
> (3) Requires Internet protocol-compatible customer premises equipment (CPE); and
>
> (4) Permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network.
>
> Notwithstanding the foregoing, solely for purposes of compliance with the Commission's 911 obligations, an interconnected VoIP service includes a service that fulfills each of subsections (1)-(3) above and permits users generally to terminate calls to the public switched telephone network."

The addition of the language capturing services that fulfill only subsections (1)-(3) extends the iVoIP definition, solely for 911 purposes, to services not previously subject to a 911 calling obligation. Importantly, the draft order states at para. 182 that "*We require outbound-only interconnected VoIP providers to comply with the 911 requirements we adopt today two years*

after the effective date of the rules."[8] This two-year time period is necessary to ensure that providers, not previously subject to any of the obligations in Section 9.11, have sufficient time to implement operational and technical changes to comply with the rules.

As currently written in the draft order, proposed section 9.11(a) – which is the existing obligation on iVoIP providers to collect and use registered location in the context of 911 calls -- is subject to the misinterpretation that the rule is immediately applicable to one-way outbound only services not previously subject to 911 obligations. Therefore, Microsoft suggests the language below to ensure that this section is not immediately applicable to all iVoIP providers.

In addition, to afford the flexibility discussed above, Microsoft recommends clarifying that section 9.11(a) of the Commission's rules (which imposes the requirement to collect and transmit Registered Location) does not apply to that category of interconnected VoIP providers that were made subject to the Commission's 911 rules for the first time by this order. Specifically, it recommends the following revision:

> **§9.11 E911 Service.**
>
> a) *Before [one year after the effective date of this rule] for fixed services and before [two years after the effective date of this rule] for non-fixed services. Subsection (a) is not applicable to an interconnected VoIP service that fulfills only subsections (1)-(3) of the definition of interconnected VoIP in §9.3 and permits users generally to terminate calls to the public switched telephone network.*

The language suggested above clarifies that newly-defined iVoIP services, long in the market and unable to reasonably obtain registered location from existing customers, should not be required to comply with subsection (a) of section 9.11. In addition, while nothing in the proposed language prohibits this category of iVoIP provider from collecting and using registered location; this language also ensures that those within that category choosing to use and transmit Registered Location are given time to implement the new system and are not required to do so immediately.

"Alternative Location Information" Definition

Interconnected VoIP providers should have the flexibility to use technologies that are more effective than Registered Location at providing the location of emergency callers. In most instances, real-time dynamic location capabilities will provide a better indicator of a non-fixed iVoIP caller's location than registered location. Although existing commercial location services may not currently have the capability of specifying the floor of a large building on which the caller is located, they are likely to provide some level of indication where within the building the caller is located (*e.g.*, where a building has several wings, it could specify the wing). Further, the definition of Alternative Location Information should be agnostic as to the mechanism or technology by which this location information is obtained. Thus, in the event that commercial location services do not provide a sufficiently precise location for the user, a provider should be

[8] Draft Order at ¶ 182, emphasis added.

permitted to satisfy its obligations through dynamic, real-time collection of this information from the user via a private third-party Emergency Calling Relay Center operator. Providers like Skype have a financial incentive to use the best automatic real-time location information it can obtain and to improve those capabilities over time so as to reduce as much as possible the number of calls that would have to use the services of such an operator.

In order to enable the flexibility to use more accurate location capabilities than Registered Location, Microsoft recommends the following minor change to the definition of Alternative Location Information in section 9.3:

> "*Alternative Location Information*. Location information (which may be coordinate-based) sufficient to identify the civic address and approximate in-building location, which may include~~ing~~ floor level, in large buildings."

This revised definition would increase the likelihood that the use of Alternative Location Information would be technically feasible for some iVoIP providers.

Pursuant to the Commission's rules, I have filed a copy of this notice electronically in the above-referenced dockets. Please contact me if you require any additional information.

Respectfully submitted,

/s/ Paula Boyd

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Senior Director, Government and Regulatory Affairs

cc: William Beckwith
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